AMENDMENTS TO THE CLAIMS

The following claim listing replaces all prior listings and versions:

1. (original) A zoom lens system comprising at least three lens groups,

wherein zooming is performed by moving at least two lens groups;

wherein a first lens group and a second lens group, in this order from an object, comprise focus-adjusting lens groups that are movable in the optical-axis direction in order not to move a position of an image plane upon zooming, when said zoom lens system is being assembled; and

wherein said focus-adjusting lens groups satisfy the following condition:

$$0.4 < \{K1(L)-K1(S)\}/\{K2(L)-K2(S)\}<1.6$$

wherein

K1(L) designates the focus sensitivity of said first lens group at the long focal length extremity;

K1(S) designates the focus sensitivity of said first lens group at the short focal length extremity;

K2(L) designates the focus sensitivity of said second lens group at the long focal length extremity; and

K2(S) designates the focus sensitivity of said second lens group at the short focal length extremity.

2. (original) The zoom lens system according to claim 1, wherein

at least one of any lens groups behind said second lens group comprises another focus-adjusting lens group that is movable in the optical-axis direction in order to coincide said image plane with the image-forming plane, when said zoom lens system is being assembled.

3. (original) The zoom lens system according to claim 1, wherein

all the lens groups of said zoom lens system comprise focus-adjusting lens groups that are movable in the optical-axis direction in order to coincide said image plane with the image-forming plane, when said zoom lens system is being assembled.

4. (original) A focus-adjustment method of a zoom lens system comprising at least three lens groups,

wherein zooming is performed by moving at least two lens groups;

wherein said focus-adjustment method comprising the steps of:

providing a first lens group and a second lens group, in this order from an object, as focus-adjusting lens groups so that said first lens group and said second lens group satisfy the following condition;

$0.4 < \{K1(L)-K1(S)\}/\{K2(L)-K2(S)\}<1.6$

wherein

K1(L) designates the focus sensitivity of said first lens group at the long focal length extremity;

K1(S) designates the focus sensitivity of said first lens group at the short focal length extremity;

K2(L) designates the focus sensitivity of said second lens group at the long focal length extremity;

K2(S) designates the focus sensitivity of said second lens group at the short focal length extremity; and

moving said first lens group and said second lens group in the optical-axis direction in order not to move a position of an image plane upon zooming, when said zoom lens system is being assembled.

5. (original) The focus-adjustment method of a zoom lens system according to claim 4, wherein said first lens group and said second lens group satisfy the following condition:

$0.2 < X1/X2 < 1.0$

wherein

X1 designates the traveling distance of said first lens group; and

X2 designates the traveling distance of said second lens group.

6. (original) The focus-adjustment method of a zoom lens system according to claim 4, wherein at least one of any lens groups behind said second lens group comprises a third focus-adjusting lens group; and

wherein said focus-adjustment method further comprising the step of moving said third lens group in the optical-axis direction in order to coincide said image plane with the image-forming plane, when said zoom lens system is being assembled.

7. (currently amended) The focus-adjustment method of a zoom lens system according to claim 6, further comprising the steps of:

measuring the amount of movement of the focal point (Δfb(S), Δfb(M) and Δfb(L)) of ~~each of said focus-adjusting lens groups~~ said third focus-adjusting lens group at the short focal length extremity, an intermediate focal length, and the long focal length extremity, respectively; and

obtaining the traveling distance (X1, X2 and X3) of each of said focus-adjusting lens groups by utilizing the following equations:

$$\sim\sim A = \begin{pmatrix} K1(S) & K2(S) & Ks(S) \\ K1(M) & K2(M) & Ks(M) \\ K1(L) & K2(L) & Ks(L) \end{pmatrix}\sim\sim \qquad A = \begin{pmatrix} K1(S) & K2(S) & K3(S) \\ K1(M) & K2(M) & K3(M) \\ K1(L) & K2(L) & K3(L) \end{pmatrix}$$

$$\begin{pmatrix} X1 \\ X2 \\ X3 \end{pmatrix} = -A^{-1} \begin{pmatrix} \Delta fb(S) \\ \Delta fb(M) \\ \Delta fb(L) \end{pmatrix}$$

wherein

K1(L) designates the focus sensitivity of said first lens group at the long focal length extremity;

K1(M) designates the focus sensitivity of said first lens group at an intermediate focal length;

K1(S) designates the focus sensitivity of said first lens group at the short focal length extremity;

K2(L) designates the focus sensitivity of said second lens group at the long focal length extremity;

K2(M) designates the focus sensitivity of said second lens group at an intermediate focal length;

K2(S) designates the focus sensitivity of said second lens group at the short focal length extremity;

K3(L) designates the focus sensitivity of said third lens group at the long focal length extremity;

K3(M) designates the focus sensitivity of said third lens group at an intermediate focal length; and

K3(S) designates the focus sensitivity of said third lens group at the short focal length extremity.

8.(original) The focus-adjustment method of a zoom lens system according to claim 4, wherein said focus-adjusting lens groups comprise "n" lens groups (including said first and second lens groups);

wherein said focus-adjustment method of a zoom lens system comprising the steps of:

measuring the amount of movement of the focal point ($\Delta fb(f1)$, $\Delta fb(f2)$ --- $\Delta fb(fn)$) at the "n" focal length positions, respectively; and

obtaining the traveling distance (X1, X2,--- Xn) of each of said focus-adjusting lens groups by utilizing the following equations:

$$A = \begin{pmatrix} K1(f1) & K2(f1) & \dots & Kn(f1) \\ K1(f2) & K2(f2) & \dots & Kn(f2) \\ \dots & \dots & \dots & \dots \\ K1(fn) & K2(fn) & \dots & Kn(fn) \end{pmatrix}$$

$$\begin{pmatrix} X1 \\ X2 \\ \dots \\ Xn \end{pmatrix} = -A^{-1} \begin{pmatrix} \Delta fb(f1) \\ \Delta fb(f2) \\ \dots \\ \Delta fb(fn) \end{pmatrix}$$

wherein

K1(f1) designates the focus sensitivity of said first lens group at a focal length f1;

K1(f2) designates the focus sensitivity of said first lens group at a focal length f2;

K1(fn) designates the focus sensitivity of said first lens group at a focal length fn;

K2(f1) designates the focus sensitivity of said second lens group at the focal length f1;

K2(f2) designates the focus sensitivity of said second lens group at the focal length f2;

K2(fn) designates the focus sensitivity of said second lens group at the focal length fn;

Kn(f1) designates the focus sensitivity of said nth lens group at the focal length f1;

Kn(f2) designates the focus sensitivity of said nth lens group at the focal length f2;

Kn(fn) designates the focus sensitivity of said nth lens group at the focal length fn; and

Xn designates the traveling distance of said nth lens group.

9. (original) The focus-adjustment method of a zoom lens system according to claim 4, wherein all the lens group of said zoom lens system comprise said focus-adjusting lens groups; and

wherein said focus-adjustment method further comprises the step of moving all the lens group of said zoom lens system in the optical-axis direction in order to coincide said image plane with the image-forming plane, when said zoom lens system is being assembled.